

IV. AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) An antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling, comprising:

an antenna element including an antenna coil fabricated from at least one turn of an electrically conductive material, a resistance component and an inductance component connected in series with the antenna coil; and

a capacitor which is connected in series to said antenna element with the resistance component disposed between the capacitor and the inductance component, the capacitorand having a variable capacitance to maintain the resonance frequency of the antenna device at the predetermined value.

2. (ORIGINAL) The antenna device according to claim 1, wherein said capacitance of said capacitor is made variable by switching a switch.

3. (CURRENTLY AMENDED) An antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling, comprising:

an antenna ~~coil~~ element including an antenna coil fabricated from at least one turn of an electrically conductive material, a resistance component, a tapped inductor and a fixed capacitor connected in series with the antenna coil with the resistance component disposed between the tapped inductor and the fixed capacitor, the tapped inductor having taps which are switched from one to another to maintain the resonance frequency of the antenna device at the predetermined value.

4. (CURRENTLY AMENDED) An antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling, comprising:

an antenna coil element including an antenna coil fabricated from at least one turn of an electrically conductive material, a resistance component, an inductance component and a fixed capacitor connected in series with the antenna coil with the resistance component disposed between the inductance component and the fixed capacitor; and

an a tapped inductor which is connected in series to said antenna coil element and having taps which are switched from one to another to maintain the resonance frequency of the antenna device at the predetermined value.

5. (PREVIOUSLY PRESENTED) The antenna device according to claim 3, wherein said taps are converted by switching a switch.

6. (PREVIOUSLY PRESENTED) The antenna device according to claim 2, wherein said switch is a semiconductor switch which is controlled by a control circuit for detecting a deviation of said resonance frequency and controlling said resonance frequency to a predetermined frequency.

7. (CURRENTLY AMENDED) An antenna device of an interrogator having a resonance frequency of a predetermined value which constitutes an automatic identification system by exchanging information with an IC tag attached to an object to be identified by electromagnetic coupling, comprising:

an antenna-coil element including an antenna coil fabricated from at least one turn of an electrically conductive material, a resistance component and a fixed capacitor connected in series with the antenna coil; and

a variable inductor, connected in series to said antenna coil with the resistance component disposed between the variable inductor and the fixed capacitor, the variable inductor operative for maintaining the resonance frequency of the antenna device at the predetermined value.

8. (ORIGINAL) The antenna device according to claim 7, wherein said variable inductor is controlled by a control circuit for detecting a deviation of resonance frequency and controlling resonance frequency to a predetermined frequency.

9. (ORIGINAL) The antenna device according to claim 1, wherein a predetermined communication distance is ensured by varying a drive voltage of said antenna device.

10. (PREVIOUSLY PRESENTED) The antenna device according to claim 5, wherein said switch is a semiconductor switch which is controlled by a control circuit for detecting a deviation of said resonance frequency and controlling said resonance frequency to a predetermined frequency.

11. (PREVIOUSLY PRESENTED) The antenna device according to claim 3, wherein a predetermined communication distance is ensured by varying a drive voltage of said antenna device.

12. (PREVIOUSLY PRESENTED) The antenna device according to claim 1, further comprising a control circuit for controlling an amount of capacitance in order to maintain the resonance frequency of the antenna device at the predetermined value.

13. (CURRENTLY AMENDED) The antenna device according to claim 4, further comprising a control circuit for controlling an amount of inductance of the tapped inductor in order to maintain the resonance frequency of the antenna

device at the predetermined value.

14. (PREVIOUSLY PRESENTED) The antenna device according to claim 7, further comprising a control circuit for controlling an amount of inductance of the variable inductor in order to maintain the resonance frequency of the antenna device at the predetermined value.